

WHAT IS CLAIMED IS:

- 1 1. A circuit comprising:
  - 2 a PAD signal line connectable to an external host
  - 3 line;
  - 4 a keeper stage configured to hold the PAD signal line
  - 5 in a weakly held state responsive to changes in the state
  - 6 of the external host signal.
- 1 2. The circuit of claim 1 in which the weakly held state
  - 2 is the last in time state of the external signal line.
- 1 3. The circuit of claim 1 wherein the keeper stage
  - 2 comprises at least one controllable weak pull-up device and
  - 3 at least one controllable weak pull-down device.
- 1 4. The circuit of claim 3 further comprising circuitry
  - 2 configured to disable the at least one weak pull-down
  - 3 device if the weak-pull up device is enabled and to disable
  - 4 the at least one weak pull-up device if the weak pull-down
  - 5 device becomes enabled.

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1 5 The circuit of claim 3 in which the control of the at  
2 least one controllable weak pull-up device comprises a  
3 logical NAND of a SLEEP signal and the PAD signal and the  
4 control of the at least one controllable weak pull-down  
5 device comprises a logical NOR of the inverted SLEEP signal  
6 and the PAD signal.

1 6 The circuit of claim 1 further comprising a  
2 controllable output buffer stage which is able to drive the  
3 state of the PAD signal and having circuitry to enable and  
4 disable the output buffer stage based upon the state of an  
5 ENABLE signal.

1 7. The circuit of claim 1 further comprising a SLEEP  
2 signal which can enable and disable the keeper stage.

1 8. The circuit of claim 7 further comprising controlling  
2 the at least one weak pull-up and the at least one weak  
3 pull-down device based upon the state of the SLEEP signal.

1 9. A method comprising:  
2 sensing the state of an external signal;  
3 storing the state of the external signal in a PAD  
4 signal weakly held in a stored state by a keeper stage;

5 the weakly held PAD signal being responsive to changes  
6 in the state of the external signal.

1 10. The method of claim 9 in which the weakly held state  
2 of the PAD signal may be overcome by the external signal.

1 11. The method of claim 9 further comprising using at  
2 least one controllable weak pull-up device and at least one  
3 controllable weak pull-down device to implement the keeper  
4 stage.

1 12. The method claim 11 further comprising disabling the at  
2 least one weak pull-down device when the at least one weak-  
3 pull up device is enabled, and disabling the at least one  
4 weak pull-up device when the at least one weak pull-up  
5 device is enabled.

1 13. The method of claim 12 further comprising controlling  
2 the weak pull-up device with a logical NAND of the PAD  
3 signal and a SLEEP signal, and controlling the at least one  
4 weak pull-down device with a logical NOR of the inverse of  
5 the SLEEP signal and PAD signal.

1 14. The method of claim 9 further comprising enabling and

1 disabling the keeper stage based upon the state of a SLEEP  
2 signal.

1 15. The method of claim 13 further comprising turning on  
2 and turning off the at least one weak pull-up and at least  
3 one weak pull-down devices based upon the state of the  
4 SLEEP signal.

1 16. The method of claim 15 further comprising implementing  
2 the controllable weak pull-up device and the controllable  
3 weak pull-down device with square devices in an integrated  
4 circuit.

1 17. A system comprising:  
2 a PAD signal line and an external signal line;  
3 electronic circuitry comprising a keeper stage  
4 configured to hold the PAD signal line weakly in a stored  
5 state responsive to changes in the state of the external  
6 signal line.

1 18. The system of claim 17 in which the weakly held PAD  
2 signal state is the last in time state of the PAD signal  
3 line.

1 19. The system of claim 17 wherein the keeper stage  
2 comprises at least one controllable weak pull-up device and  
3 at least one controllable weak pull-down device.

1 20. The system of claim 19 further comprising control  
2 circuitry configured to disable the at least one  
3 controllable weak pull-down device if the at least one  
4 controllable weak-pull up device is enabled, and to disable  
5 the at least one controllable weak-pull-up device if the at  
6 least one controllable weak pull-down device becomes  
7 enabled.

1 21. The system of claim 17 wherein the circuitry is  
2 implemented in an integrated circuit.

1 22. The system of claim 21 wherein the controllable weak  
2 pull-up device and the controllable weak pull-down device  
3 are square devices.

1 23. The system of claim 20 further comprising a SLEEP  
2 signal line and control circuitry configured to disable and  
3 enable the keeper stage based upon the state of the SLEEP  
4 signal.

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